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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/577,500

02/05/2007

Atul Kuver

65008-065

9932

7590 05/13/2008  
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EXAMINER

SMITH, CHAD

ART UNIT

PAPER NUMBER

2874

MAIL DATE

DELIVERY MODE

05/13/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/577,500	<b>Applicant(s)</b> KUYER ET AL.	
	<b>Examiner</b> Chad H. Smith	<b>Art Unit</b> 2874	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 25 January 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 and 12 is/are rejected.
- 7) ☒ Claim(s) 10 and 11 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 February 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Arguments***

Applicant's arguments, see Remarks, filed on 1/25/08, with respect to the rejection(s) of claim(s) 1 under 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Walker (U.S. PG Pub. # 2006/0120655 A1).

### ***Allowable Subject Matter***

Claims 10 and 11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The following is a statement of reasons for the indication of allowable subject matter: The prior art of record, taken alone or in combination, fails to disclose or render obvious wherein the substrate comprises a second isolation trench extending through the n<sup>+</sup> electrically conducting layer between the central electrode strip and the optical waveguides. Claim 11 is allowable based solely on its dependence from allowable claim 10.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an

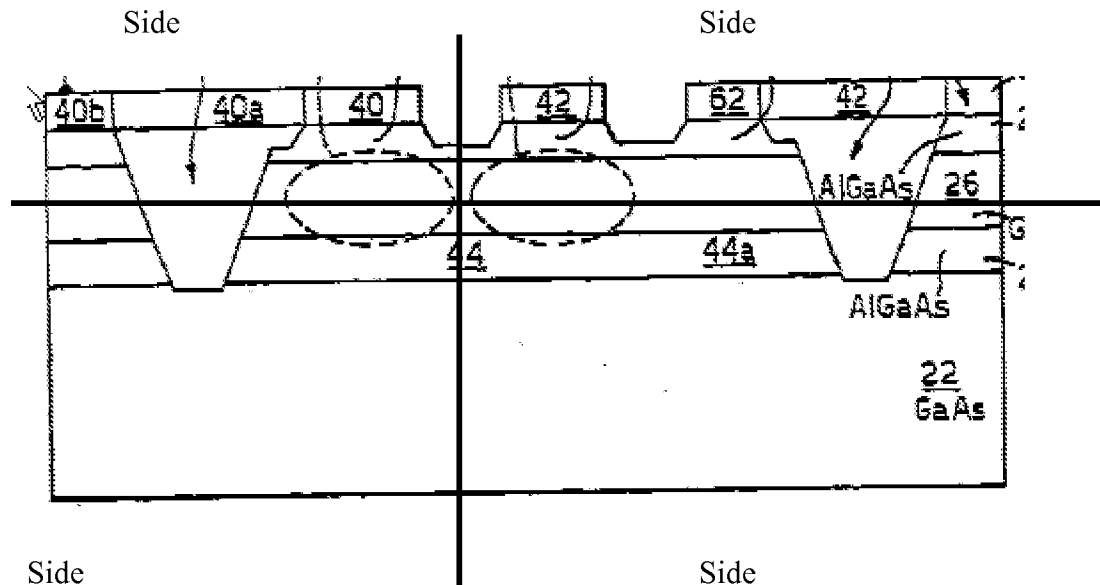
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international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Walker (U.S. PG Pub. # 2006/0120655 A1).

'655 teaches a coplanar waveguide line comprising: a substrate (22); a central electrode strip on the substrate (62); first (40b) and second (44) electrode strips disposed on opposite sides (as noted below a side from top to bottom and a side from left to right) of the central electrode strip and extending parallel thereto (fig. 9); first (38) and second (36) optical waveguides on the substrate, the optical waveguides being positioned between the first and central electrode strips and extending parallel thereto (fig. 5, below); the central electrode comprising at least one T-rail extending proximate to the first optical waveguide (par. 0053, lines 18 – 19); the first electrode comprising at least one T-rail extending proximate to the second optical waveguide (40a, 40 par. 0050 lines 11 – 15); the substrate comprising an  $n^+$  electrically conducting layer extending between the optical waveguides (24, par. 0050); wherein the coplanar waveguide line further comprises an electrical connection between first and second electrode strips (figs. 5 and 6).

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In Re claim 2, '655 teaches a V-bias source connected between the first and second electrode strips (via the connecting wires) and therefore necessarily the connecting wires are viewed as an airbridge.

In Re claim 3, '655 teaches wire bonding in figure 6.

In Re claim 4, '655 teaches wherein the electrical connection between first and second electrodes extends through the back of the substrate (fig. 6).

In Re claim 6, '655 teaches wherein at least one of the central electrode strip and first electrode strip comprises a plurality of T-rails, preferably equally spaced (fig. 9).

In Re claim 7, '655 teaches wherein the T-rail comprises a contact pad electrically connected to the corresponding electrode strip by an airbridge (figs. 5 and 9).

In Re claim 8, '655 teaches wherein the contact pad abuts the optical waveguide as layer 28 is an optical confinement layer and can be construed as a cladding as known to confine light in an optical fiber (fig. 5).

In Re claim 9, '655 teaches wherein the substrate comprises a first isolation trench which extends through the  $n^+$  electrically conducting layer between the first electrode strip and optical waveguides (fig. 5, the trench does cut through item 22, the substrate).

In Re claim 12, '655 teaches a Mach-Zehnder modulator (par. 0049).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out

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the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Walker (U.S. PG Pub. # 2006/0120655 A1).

'655 teaches the coplanar waveguide line as previously discussed in claim 1 above, but is silent to a plurality of electrical connections between first and second electrode strips, the electrical connections preferably being equally spaced. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have multiple electrical connections between first and second electrode strips to maintain electrical uniformity down the strips and minimizing resistance loss in the line.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chad H. Smith whose telephone number is (571) 270-1294. The examiner can normally be reached on Monday-Thursday 7:30a.m. - 5:00p.m. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on 571-270-2344. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Chad H Smith/  
Examiner, Art Unit 2874

/Sung H. Pak/  
Primary Examiner, Art Unit 2874